



ARC/NRC-PM-004

Project No. 99902103

April 27, 2023

US Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

Subject: ARC Clean Technology  
Revision 4 of the ARC-100 Regulatory Engagement Plan (REP)

Reference: ARC/NRC-PM003 dated December 5, 2022

The reference letter transmitted a correction to a revision to the ARC-100 Regulatory Engagement Plan (REP). The REP was provided for NRC staff information and outlines plans for interactions with the NRC during pre-licensing activities associated with the ARC-100 Sodium-Cooled Fast Reactor.

During the meeting held on April 12, 2023, ARC Clean Technology committed to provide the NRC with a schedule of planned White Papers and Technical /Topical Reports and to revise the REP every time additional papers or reports may be planned and scheduled. This letter provides the revision of the REP Enclosure 1 with the proposed schedule for submittal of the white papers and technical and topical reports identified to date.

If you have any questions or need any additional information, please contact me at [riotti@arc-cleantech.com](mailto:riotti@arc-cleantech.com) or (732) 890-3602 or Raymond Burski, ARC 100 Licensing Director [rburski@arc-cleantech.com](mailto:rburski@arc-cleantech.com) or (504) 909-6436.

A handwritten signature in black ink, appearing to read "Robert Iotti", is written over a horizontal line.

Sincerely,

Robert Iotti

ARC 100 Project Manager  
ARC Clean Technology

Enclosure:

ARC-100 Regulatory Engagement –Meeting Dates and proposed White Papers and Technical/Topical Reports with proposed scheduled dates

cc (w/enclosure):

Stephanie Devlin-Gill, Senior Project Manager, NRR/DANU/UAR1

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William Jessup, Chief, NRR/DANU/UAR1

Stephen Philpot, Acting Chief, NRR/DANU/UAL2

Kaattrin Abbott, DOE Program & Project Manager

## **Enclosure 1 (Revised)**

### **A. Regulatory Engagement - Revised Content and Proposed Meeting Dates**

Meeting\*\* dates and Information material [in brackets] to be made available to the NRC approximately 30 days before the meetings.

#### **1<sup>st</sup> Meeting April 12 2023**

Quality Program, Design Approach, Project Execution [ARC Quality Assurance Program Description, Project Execution Plan]

SSC Classification [ARC Structures, Systems and Components Classification Approach and Report]

White Paper on SSC classification as RTNSS

Fuel [Fuel Qualification Program Plan; Fuel System Design Description Document (SDD)]

Core [Core SDD]

Reactor Vessel, Guard Vessel, and Internals [RVDV SDD]

Primary System [Primary Heat Transport SDD],

Reactivity Control [Reactivity Control and Drive system SDD]

Heat Removal Systems [Direct Reactor Auxiliary Cooling System (DRACS); Reactor Vessel Auxiliary Cooling System (RVACS) SDD]

R&D Management Program [Same name report]

#### **2<sup>nd</sup> Meeting November 2023**

Fuel Handling Systems and Safeguards [Fuel Handling Systems SDD]

Instrumentation and Control (Reactor Protection Systems) [I&C SDD]

Electrical [Electrical SDD; EM Pumps Variable Frequency Drives; Pump Coast down provisions technical report]

Power Conversion System [Power Conversion System SDD]

Purification Systems [Primary and Intermediate sodium purification SDD; Cover gas purification SDD]

#### **3<sup>rd</sup> Meeting April 2024**

Probabilistic Safety Analysis [Technical Information Report]

Deterministic Safety Analyses [Updated Technical Information Report]

Functional Containment [Technical Information Report]

## 4<sup>th</sup> Meeting November 2024

### Structures

Seismic Isolation [*Technical Information Report*]

Aircraft Impact

Flexibility to operate ARC-100 at 200MWe (545MWth) [*Technical Information Report*]

### Other systems and structures

Fire protection [*Fire Protection SDD*]

HVAC [*Safety and non-Safety HVAC SDD*]

Security

Water Systems [*Various SDDs*]

### R&D Activities

Technical Information Report on Flow Blockage

Technical Information Report on Power Reactivity Decrement (precomputed shapes)

Justification for no Alternate Shutdown System [*Technical Information Report*]

Updated R&D Program [*Technical Information Report*]

## 5<sup>th</sup> Meeting April 2025

Decommissioning [*Technical Information Report*]

Update on prior meeting

NRC Preliminary Conclusions

**\*\*Propose all meetings via Video with the possible exception of last meeting**

## **B. Proposed Schedule of White Papers (WP), Technical (TCR) and Topical (TPR) Reports**

Type	Topic	Proposed Submittal Date
WP	Spent fuel storage in main reactor vessel (safety, security and safeguards advantages)	June 30, 2023
WP	Fuel Qualification by Design and First of a Kind (FOAK) Confirmation Program	Sept. 4, 2023
TCR	Variable Frequency Drives and Safety Related Coast-down of Primary Pumps	Sept 4, 2023
TCR	Power Reactivity Decrement use to predict core potential abnormalities and deformations	March 15, 2024

TPR	Topical Report on Functional Containment (Containment vs. Confinement)	March 15, 2024
TPR	Topical Report on Alternate Shutdown (Not Rods) System	May 15, 2024
TPR	Probabilistic Safety Assessment and Reactor Protection System Simplification	June. 15 2024
TCR	Flow blockage consequences- extent of propagation	August 1, 2024
TPR	Topical Report on Use of Seismic Isolators	Sept. 15, 2024
TCR	Flexibility to Operate at 200 MWe	February 15, 2025
TCR	Research and Development Program	February 15. 2025